

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/19/09 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 5 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levesque et al. (US 2003/0170003 A1) in view of Seo (US 2001/0008427 A1).

**Regarding Claim 1**, Levesque et al. teaches an image recording and reproducing apparatus, comprising:

- a tuner configured to tune a live signal (Paragraphs [0004,0028] – tuned to receive broadcast, Fig. 4, 13);
- a first decoder configured to decode the live signal outputted from the user (Fig. 4, 34 – real-time decoder);

- a second decoder configured to decode a time shift signal, wherein the time shift signal is a time delayed signal of the live signal outputted from the tuner (Fig. 4, 18 – time-shifted decoder; Paragraph [0024]);
- a signal processing unit configured to process the decoded live signal outputted from the first decoder and the decoded time shift signal outputted from the second decoder (in at least Fig. 4, 23 - switch); and
- a display unit configured to display the processed signals (Figs. 1-4, output to display),
- but fails to explicitly teach wherein the live signal and the time shift signal are displayed simultaneously.

Seo teaches wherein the live signal and the time shift signal are displayed simultaneously (Fig. 1, 20-30; Paragraphs [0011,0024,0025,0030,0032,0033] – simultaneous viewing of selected live stream and time-shifted version)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a broadcasted signal time-shift recorded to playback in a delayed manner when there is an interruption so as to allow viewer to not miss any of the broadcasted signal when returning from interruption (Seo, Paragraphs [0032,0033] – seamless playback from paused live signal to time-shift).

**Regarding Claim 2**, Levesque et al. teaches the image recording and reproducing apparatus according to claim 1, further comprising a recording/storing unit configured to record and store the time shift signal (Fig. 4, 24 – storage buffer).

**Regarding Claim 5**, Levesque et al. teaches the image recording and reproducing apparatus according to claim 1, wherein the signal processing unit is configured to process the

decoded time shift signal (Fig. 4, 18) and the decoded live signal (Fig. 4, 34) to be displayed on one screen (Fig. 4 – output to display; see Abstract) when a user request a reproduction of a current broadcasting (Paragraphs [0025,0026,0028-0030] – seamless display of current broadcast upon pause).

**Regarding Claim 9**, Levesque et al. teaches the image recording and reproducing apparatus according to claim 1, *but fails to explicitly teach* wherein the display unit is configured to display the synthesized signals on at least one split screen. Seo teaches wherein the display unit is configured to display the synthesized signals on at least one split screen (Fig. 1, 30 – time-shift signal split among other live signals).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a split screen enabling a user the choice to select from one of two (or more) reproductions supplying further variety.

**Regarding Claim 10**, Levesque et al. teaches an image recording and reproducing apparatus, comprising:

- a tuner configured to tune a broadcast signal (Paragraphs [0004,0028] – tuned to receive broadcast, Fig. 4, 13);
- a mode setup unit configured to set a mode of the broadcast signal outputted from the tuner (Paragraphs [0025,0026,0028-0030,0033,0040] – live signal switched to time-shifted upon user pause);
- a recording/storing unit configured to selectively store the broadcasting signal according to the mode set by the mode setup unit (Fig. 4, 24 – storage buffer);

- a live decoding unit configured to decode a live signal outputted from the tuner (Fig. 4, 34 – real-time decoder);
- a time shift decoding unit configured to decode a time shift signal outputted from the recording/storing unit, wherein the time shift signal is a time delayed signal of the live signal outputted from the tuner (Fig. 4, 18 – time-shifted decoder; Paragraph [0024]);
- a signal processing unit configured to process the decoded live signal and the decoded time shift signal (in at least Fig. 4, 23 - switch); and
- a display unit configured to display the processed signals (Figs. 1-4, output to display),
- but fails to explicitly teach wherein the live signal and the time shift signal are displayed simultaneously.

Seo teaches wherein the live signal and the time shift signal are displayed simultaneously (Fig. 1, 20-30; Paragraphs [0011,0024,0025,0030,0032,0033] – simultaneous viewing of selected live stream and time-shifted version)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a broadcasted signal time-shift recorded to playback in a delayed manner when there is an interruption so as to allow viewer to not miss any of the broadcasted signal when returning from interruption (Seo, Paragraphs [0032,0033] – seamless playback from paused live signal to time-shift).

**Regarding Claim 11**, Levesque et al. teaches an image recording and reproducing method, comprising the steps of:

- tuning a live signal using a tuner (Paragraphs [0004,0028] – tuned to receive broadcast, Fig. 4, 13);

- selecting a time shift mode using a mode setup unit (Paragraphs [0025,0026,0028-0030,0033,0040] – live signal switched to time-shifted upon user pause);
- when a signal is reproduced in a time shift mode, decoding the live signal outputted from the tuner and a time shift signal through first and second decoding units (Fig. 4, 34 – real-time decoder and Fig. 4, 18 – time-shifted decoder; Paragraph [0024]), respectively, wherein the time shift signal is a time delayed signal of the live signal outputted from the tuner (Fig. 4, 18 – time-shifted decoder; Paragraph [0024]);
- processing the decoded live signal and the decoded time shift signal (in at least Fig. 4, 23 - switch); and
- displaying the processed signals (Figs. 1-4, output to display),
- but fails to explicitly teach wherein the live signal and the time shift signal are displayed simultaneously.

Seo teaches wherein the live signal and the time shift signal are displayed simultaneously (Fig. 1, 20-30; Paragraphs [0011,0024,0025,0030,0032,0033] – simultaneous viewing of selected live stream and time-shifted version)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a broadcasted signal time-shift recorded to playback in a delayed manner when there is an interruption so as to allow viewer to not miss any of the broadcasted signal when returning from interruption (Seo, Paragraphs [0032,0033] – seamless playback from paused live signal to time-shift).

**Regarding Claim 12**, Levesque et al. teaches the image recording and reproducing method according to claim 11, wherein the time shift signal is recorded and stored in a recording/storing unit (Fig. 4, 24 – storage buffer).

4. Claims 6, 7, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levesque et al. (US 2003/0170003 A1) in view of Seo (US 2001/0008427 A1) and in further view of Cavallerano et al. (US 2002/0057372 A1).

**Regarding Claim 6**, Levesque et al. teaches the image recording and reproducing apparatus according to claim 1, wherein the signal processing unit is configured to process the signals to display the live signal and the time shift signal (in at least Fig. 4, 23 - switch) on a main screen and a sub-screen, respectively, the main screen and the sub-screen belonging to one screen when a user requests a reproduction of a current broadcasting (Fig. 1, 20-30; Paragraphs [0011,0024,0025,0030,0032,0033] – user request of live broadcasting).

Levesque et al. *fails to explicitly teach* on a main screen and a sub-screen, respectively, the main screen and the sub-screen belonging to one screen. Cavallerano teaches on a main screen and a sub-screen (Fig. 1; 3 and 4; Paragraph [0021] – on main and sub-screen), respectively, the main screen and the sub-screen belonging to one screen (see Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a picture-in-picture of a current broadcasting with its associated time-shifted signal so as to review past events while having the ability to switch back to the current broadcast (Cavallerano, Paragraphs [0002,0003]).

**Regarding Claim 7**, Levesque et al. teaches the image recording and reproducing apparatus according to claim 1, wherein the signal processing unit is configured to process the signals to display the time shift signal and the live signal (in at least Fig. 4, 23 - switch) on a main screen and a sub-screen, respectively, the main screen and the sub-screen belonging to

one screen when a user requests a reproduction of a previous broadcasting (Fig. 1, 20-30; Paragraphs [0011,0024,0025,0030,0032,0033] – user request of time-shifted signal).

Levesque et al. *fails to explicitly teach* on a main screen and a sub-screen, respectively, the main screen and the sub-screen belonging to one screen. Cavallerano teaches on a main screen and a sub-screen (Fig. 1; 3 and 4; Paragraphs [0002-0003,0021] – swap the program being viewed in the main display with the PIP from main to sub-screen), respectively, the main screen and the sub-screen belonging to one screen (see Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a picture-in-picture of a current broadcasting with its associated time-shifted signal so as to review past events while having the ability to switch back to the current broadcast (Cavallerano, Paragraphs [0002,0003]).

**Regarding Claim 15**, Levesque et al. teaches the image recording and reproducing method according to claim 11, wherein, when a reproduction of a current broadcasting is requested from a user (Fig. 1, 20-30; Paragraphs [0011,0024,0025,0030,0032,0033] – user request of live broadcast), *but fails to explicitly teach* the signals are processed to display the live signal and the time shift signal on a main screen and a sub-screen, respectively, the main screen and the sub-screen belonging to one screen. Cavallerano teaches to display the live signal and the time shift signal on a main screen and a sub-screen, respectively (Fig. 1; 3 and 4; Paragraph [0021] – on main and sub-screen), the main screen and the sub-screen belonging to one screen (see Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a picture-in-picture of a current broadcasting with its associated time-shifted

signal so as to review past events while having the ability to switch back to the current broadcast (Cavallerano, Paragraphs [0002,0003]).

**Regarding Claim 16**, Levesque et al. teaches the image recording and reproducing method according to claim 11, wherein when a reproduction of a previous broadcasting is requested from a user (Fig. 1, 20-30; Paragraphs [0011,0024,0025,0030,0032,0033] – user request of a time-shifted signal), *but fails to explicitly teach* the signals are processed to display the time shift signal and the live signal on a main screen and a sub-screen, respectively, the main screen and the sub-screen belonging to one screen. Cavallerano teaches to display the live signal and the time shift signal on a main screen and a sub-screen, respectively (Fig. 1; 3 and 4; Paragraphs [0002-0003,0021] – swap the program being viewed in the main display with the PIP from main to sub-screen), the main screen and the sub-screen belonging to one screen (see Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a picture-in-picture of a current broadcasting with it's associated time-shifted signal so as to review past events while having the ability to switch back to the current broadcast (Cavallerano, Paragraphs [0002,0003]).

5. Claims 8 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levesque et al. (US 2003/0170003 A1) in view of Seo (US 2001/0008427 A1) and in further view of Takahashi et al. (US 2003/0099457 A1).



**Regarding Claim 8,** Levesque et al. teaches the image recording and reproducing apparatus according to claim 2, wherein, when the screen switches from the previous broadcasting to the current broadcasting (Paragraphs [0026,0030-0032]), *but fails to explicitly teach* a reproducing end position of the time shift signal is recorded, and when the screen again switches from the current broadcasting to the previous broadcasting, the signal processing unit processes the decoded time shift signal and decoded live signal to display the time shift signal from the recorded reproducing end position. Takahashi et al. teaches a reproducing end position of the time shift signal is recorded (Fig. 3, 208 – storage of real-time and read-out position; Page 11, claim 1), and when the screen again switches from the current broadcasting to the previous broadcasting, the signal processing unit processes the signals to display the decoded time shift signal and decoded live signal from the recorded reproducing end position (Paragraphs [0079,0093,0111,129]; Figs. 4, 7 and 12; Page 11, claim 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Levesque et al. and Takahashi et al. so as to allow the user to view a part of a program content during an interruption or a switch to another program, to commence viewing continuously afterwards by resumption of the saved program content during the interruption or switch (Takahashi, Paragraphs [0004,0005]).

**Regarding Claim 17,** Levesque et al. teaches an image recording and reproducing method, comprising the steps of:

- tuning a live signal using a tuner (Paragraphs [0004,0028] – tuned to receive broadcast, Fig. 4, 13);
- selecting a time shift mode using a mode setup unit (Paragraphs [0025,0026,0028-0030,0033,0040] – live signal switched to time-shifted upon user pause);

- a) when a signal is reproduced in a time shift mode, displaying a time shift signal and a live signal on one screen at the same time in response to a user's request for a reproduction of a previous broadcasting (Fig. 1, 20-30; Paragraphs [0011,0024,0025,0030,0032,0033] – user request of a time-shifted signal), wherein the live signal is outputted from the tuner and the time shift signal is a time delayed signal of the live signal outputted from the tuner (Fig. 4, 34 – real-time decoder and Fig. 4, 18 – time-shifted decoder; Paragraph [0024]);
- b) when the user requests a reproduction of a current broadcasting during the reproduction (Fig. 1, 20-30; Paragraphs [0011,0024,0025,0030,0032,0033] – user request of a live signal), recording a reproducing end position of the time shift signal; and
- c) when the user requests a reproduction of a previous broadcasting again (Fig. 1, 20-30; Paragraphs [0011,0024,0025,0030,0032,0033] – user switching back to request a time-shifted signal), decoding and reproducing the previous broadcasting from the recorded reproducing end position of the time shift signal,
- wherein the live signal and the time shift signal are displayed simultaneously.

Levesque explicitly fails to teach a) when a signal is reproduced in a time shift mode, displaying a time shift signal and a live signal on one screen at the same time, b) recording a reproducing end position of the time shift signal, c) decoding and reproducing the previous broadcasting from the recorded reproducing end position of the time shift signal, and wherein the live signal and the time shift signal are displayed simultaneously.

Seo teaches a) when a signal is reproduced in a time shift mode, displaying a time shift signal and a live signal on one screen at the same time as well as, wherein the live signal and the time shift signal are displayed simultaneously (Fig. 1, 20-30; Paragraphs [0011,0024,0025,0030,0032,0033] – simultaneous viewing of selected live stream and time-

shifted version). Further, Takahashi et al. teaches b) recording a reproducing end position of the time shift signal (Fig. 3, 208 – storage of real-time and read-out position; Page 11, claim 1), c) decoding and reproducing the previous broadcasting from the recorded reproducing end position of the time shift signal (Paragraphs [0079,0093,0111,129]; Figs. 4, 7 and 12; Page 11, claim 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Levesque et al. and Takahashi et al. so as to allow the user to view a part of a program content during an interruption or a switch to another program, to commence viewing continuously afterwards by resumption of the saved program content during the interruption or switch (Takahashi, Paragraphs [0004,0005]) as well as to have a broadcasted signal time-shift recorded to playback in a delayed manner when there is an interruption so as to allow viewer to not miss any of the broadcasted signal when returning from interruption (Seo, Paragraphs [0032,0033] – seamless playback from paused live signal to time-shift)..

6. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levesque et al. (US 2003/0170003 A1) in view of Seo (US 2001/0008427 A1) and in view of Takahashi et al. (US 2003/0099457 A1) and in further view of Cavallerano et al. (US 2002/0057372 A1).

**Regarding Claim 18**, Levesque et al. teaches the image recording and reproducing method according to claim 17, wherein when the user requests a reproduction of the previous broadcasting in the step a) or c) (Fig. 1, 20-30; Paragraphs [0011,0024,0025,0030,0032,0033] –

user request of a time-shifted signal), *but fails to explicitly teach* the time shift signal and the live signal are displayed on a main screen and a sub-screen, respectively.

Cavallerano teaches the time shift signal and the live signal are displayed on a main screen and a sub-screen, respectively (Fig. 1; 3 and 4; Paragraphs [0002-0003,0021] – time-shift on main display with the PIP from live to sub-screen).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a picture-in-picture of a time-shift broadcasting with its associated live signal so as to review past events while having the ability to switch back to the current broadcast (Cavallerano, Paragraphs [0002,0003]).

**Regarding Claim 19**, Levesque et al. teaches the image recording and reproducing method according to claim 17, wherein when the user requests the reproduction of the current broadcasting in the step b) (Fig. 1, 20-30; Paragraphs [0011,0024,0025,0030,0032,0033] – user request of a live signal), *but fails to explicitly teach* the live signal and the time shift signal are displayed on a main screen and a sub-screen, respectively.

Cavallerano teaches the live signal and the time shift signal are displayed on a main screen and a sub-screen, respectively (Fig. 1; 3 and 4; Paragraphs [0002-0003,0021] – swap the program being viewed in the main display with the PIP from main to sub-screen).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a picture-in-picture of a current broadcasting with its associated time-shifted signal so as to review past events while having the ability to switch back to the current broadcast (Cavallerano, Paragraphs [0002,0003]).

7. Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levesque et al. (US 2003/0170003 A1) in view of Seo (US 2001/0008427 A1) and in further view of Plourde, Jr (US 2003/0108331 A1).

**Regarding Claim 21**, Levesque et al. teaches the image recording and reproduction apparatus according to claim 1, *but fails to explicitly teach* wherein a progress status bar indicating the current reproducing position of the time shift signal compared to the reproducing position of the live signal is displayed. Plourde, Jr et al. teaches wherein a progress status bar indicating the current reproducing position of the time shift signal compared to the reproducing position of the live signal is displayed (Paragraph [0116-0118]; Figs. 20-22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a progress bar indicating timing concerning buffer/cache space thereby allowing user to facilitate position of current viewing relative to information already buffered/cached so as to perform trick-play fast-forward or rewind to positions of interest (Plourde, Jr. Paragraph [0116]).

**Regarding Claim 22**, Levesque et al. teaches the image recording and reproduction apparatus according to claim 10, *but fails to explicitly teach* wherein a progress status bar indicating the current reproducing position of the time shift signal compared to the reproducing position of the live signal is displayed. Plourde, Jr et al. teaches wherein a progress status bar indicating the current reproducing position of the time shift signal compared to the reproducing position of the live signal is displayed (Paragraph [0116-0118]; Figs. 20-22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a progress bar indicating timing concerning buffer/cache space thereby allowing

user to facilitate position of current viewing relative to information already buffered/cached so as to perform trick-play fast-forward or rewind to positions of interest (Plourde, Jr. Paragraph [0116]).

**Regarding Claim 23**, Levesque et al. teaches the image recording and reproduction apparatus according to claim 11, *but fails to explicitly teach* further comprising: displaying a progress status bar indicating the current reproducing position of the time shift signal compared to the reproducing position of the live signal. Plourde, Jr et al. teaches further comprising: displaying a progress status bar indicating the current reproducing position of the time shift signal compared to the reproducing position of the live signal (Paragraph [0116-0118]; Figs. 20-22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a progress bar indicating timing concerning buffer/cache space thereby allowing user to facilitate position of current viewing relative to information already buffered/cached so as to perform trick-play fast-forward or rewind to positions of interest (Plourde, Jr. Paragraph [0116]).

8. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Levesque et al. (US 2003/0170003 A1) in view of Seo (US 2001/0008427 A1) in further view of Takahashi et al. (US 2003/0099457 A1) and in further view of Plourde, Jr (US 2003/0108331 A1).

**Regarding Claim 24**, Levesque et al. teaches the image recording and reproduction apparatus according to claim 17, *but fails to explicitly teach* further comprising: displaying a progress status bar indicating the current reproducing position of the time shift signal compared to the reproducing position of the live signal. Plourde, Jr et al. teaches further comprising: displaying a progress status bar indicating the current reproducing position of the time shift signal compared to the reproducing position of the live signal (Paragraph [0116-0118]; Figs. 20-22).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have a progress bar indicating timing concerning buffer/cache space thereby allowing user to facilitate position of current viewing relative to information already buffered/cached so as to perform trick-play fast-forward or rewind to positions of interest (Plourde, Jr. Paragraph [0116]).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL CHOI whose telephone number is (571) 272-9594. The examiner can normally be reached on M-F (9am - 5:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (571) 272-7905. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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